

## CLAIMS

1. A method for enrichment/separation of a protein or a peptide, comprising separating a protein or  
5 a peptide containing an amino acid residue with a  $\pi$  electron-containing group by using a media with a  $\pi$  electron-containing group.

2. The method according to claim 1, wherein the amino acid residue with a  $\pi$  electron-containing group is  
10 tryptophan residue.

3. The method according to claim 1, wherein the  $\pi$  electron-containing group of the media is phenyl group.

4. A method for enrichment/separation of a protein or a peptide, comprising separating a protein or  
15 a peptide containing an amino acid residue with a  $\pi$  electron-containing modifying group, which is modified with a  $\pi$  electron-containing compound, by using a media with a  $\pi$  electron-containing group.

5. The method according to claim 4, wherein the  
20 amino acid residue is tryptophan residue.

6. The method according to claim 4, wherein the  $\pi$  electron-containing compound is a sulfenyl compound having  $\pi$  electrons.

7. The method according to claim 6, wherein the  
25 sulfenyl compound is 2-nitrobenzene sulfenyl chloride.

8. The method according to claim 4, wherein the  $\pi$  electron-containing group of the media is phenyl group.

9. A method for enrichment/separation of a peptide, comprising the steps of:

5        fragmenting a protein or a peptide containing an amino acid residue with a  $\pi$  electron-containing group, to obtain a fragmented sample solution which contains a peptide fragment containing the amino acid residue with the  $\pi$  electron-containing group and a peptide fragment  
10 with no  $\pi$  electron-containing group; and

      exposing the fragmented sample solution to a media with a  $\pi$  electron-containing group, to separate the peptide fragment containing the amino acid residue with the  $\pi$  electron-containing group from the peptide fragment  
15 with no  $\pi$  electron-containing group.

10. A method for enrichment/separation of a peptide, comprising the steps of:

      modifying a protein or a peptide with a  $\pi$  electron-containing compound to obtain a sample solution which  
20 contains a protein or a peptide containing an amino acid residue with a  $\pi$  electron-containing modifying group;

      fragmenting the protein or the peptide containing the amino acid residue with the  $\pi$  electron-containing modifying group, to obtain a fragmented sample solution  
25 which contains a peptide fragment containing the amino

acid residue with the  $\pi$  electron-containing group and a peptide fragment with no  $\pi$  electron groups; and

exposing the fragmented sample solution to a media with a  $\pi$  electron-containing group, to separate the  
5 peptide fragment containing the amino acid residue with the  $\pi$  electron-containing group from the peptide fragment with no  $\pi$  electron-containing group.